DOCUMENT RESUME

ED 315 950 EC 222 100

AUTHOR	Cox, June
TITLE	The Richardson Study Dissemination and Implementation. A Leadership Accessing Monograph: Education of Gifted and Talented Youth.
INSTITUTION	Purdue Univ., West Lafayette, IN. Gifted Education Resource Inst.
SPONS AGENCY	Indiana State Dept. of Education, Indianapolis. Office of Gifted and Talented Education.
PUB DATE	88
NOTE	28p.; Funded by the Sid W. Richardson Foundation.
PUB TYPE	Reports - Descriptive (141) -- Collected Works - Serials (022)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Demonstration Programs; *Educational Practices; Elementary Secondary Education; *Gifted; *Models; Program Development; Program Effectiveness
IDENTIFIERS	*Richardson Study

ABSTRACT

This monograph describes the organization, findings, and impact of a 4-year study which investigated programming options for able learners. The study had three goals: to find out what was being done in schools for able learners, to judge the effectiveness of current programs, and to recommend practices and programs which would result in excellence. To implement the results of the study, a model program called the Pyramid Project was developed. Four school districts of different sizes in the Fort Worth/Dallas (Texas) area work cooperatively to provide services that best meet the needs of able learners. The document describes demographic characteristics of the school districts, their commitment to the project, start up, staff development, and emphasis on flexible pacing of able learners. Another Pyramid Project in Ardmore, Oklahoma, is also briefly described. A summary of recommendations for the education of able learners concludes the report. (JDD)

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The Richardson Study
Dissemination and Implementation

A Leadership Accessing Monograph

Education of Gifted and Talented Youth

Ms. June Cox, Gifted Students Institute, Fort Worth, Texas

Indiana Department of Education
Office of Gifted and Talented Education
H. Dean Evans, Superintendent

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Acknowledgments

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The Leadership Accessing Program is sponsored by funds from the Indiana Department of Education, Office of Gifted and Talented Education.

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Introduction

In the 1985-86 school year, Purdue University, in contract with the Indiana Department of Education, organized the Leadership Accessing Project, a program that provided state-of-the-art information and guidelines concerning the development of programs for gifted and talented youth of Indiana school corporations. Five nationally and internationally recognized specialists in gifted and talented education, Ms. June Cox, Dr. Merle Karnes, Dr. Bruce Shore, Dr. Barbara Clark, and Dr. Abraham Tannenbaum, gave symposium addresses at three sites in Indiana (Indianapolis, Columbus, and South Bend). They addressed key issues and problems in identification, programming, and curriculum development for the gifted.

In addition, the symposiasts submitted the following monographs for publication by the Indiana Department of Education. Each includes thought provoking advice concerning program development for gifted and talented youth.

The symposiasts were selected by a project advisory committee using the following criteria: (1) the nominees were known by the project leaders and/or advisory committee members to have a significant message for gifted and talented education, and (2) the nominees had never or rarely presented their ideas in Indiana.

Introduction to Monograph

June Cox reports in detail about the four year study of the education of able learners funded by the Sid W. Richardson foundation. The study had three goals — to find out what was being done in schools for able learners, to judge the effectiveness of current programs and to recommend practices and programs which would result in excellence. The data were gathered through interviews, questionnaires, and site visits to exemplary programs located all over the country — Project Pegasus in Iowa and Oaks Academy in Texas were visited and classes observed. Finally, a series of mini-conferences was held. All of this activity resulted in a somewhat lengthy list of recommendations: a steady challenge for all students, broad and comprehensive programs for able learners, and frequent evaluations of these programs. The recommendations also stress the importance of early identification and pacing which is appropriate for each learner, regardless of age or grade level. Cox calls this "flexible pacing".

Cox describes several exemplary projects — The Fort Worth/Dallas Pyramid project, among others. She concludes: "If these projects are carried out with the enthusiasm with which they started, we can hope for real impact in the schools and an improved educational climate for our ablest learners".

The recommendations of the Richardson project are presented in a new book, *Educating Able Learners, Programs and Promising Practices,* co-authored by June Cox, Neil Daniel, and Bruce O. Boston and published by the University of Texas Press. The book describes the survey research conducted by the project, the site visits, the results of a survey of MacArthur Fellows and their views of desirable educational experiences for talent development, the Pyramid Project model, and the specific proposals for school programs to serve able learners.

The Richardson Study results are being disseminated in conferences throughout the United States. They should have a major impact on future development of programs for gifted and talented youth.

Biography of Ms. June Cox

June Cox holds degrees from Indiana State University and the University of Illinois. She began working in the field of gifted education in the sixties. First an English consultant for a local district in Illinois, she later coordinated demonstration centers for gifted students throughout the state for the State Department of Education.

She moved to Texas to work with the Gifted Students Institute in 1973 where she has been Executive Director since 1975. From 1981 through 1984, Ms. Cox was employed as Director of Research for the Sid W. Richardson Foundation in Fort Worth. She conducted a four-year study of the education of able learners for the Foundation, visiting schools throughout the country, chairing mini-conferences, and conferring with other leaders in the field. After completing the Richardson Study, she returned full time to the Institute in January of 1985.

Ms. Cox has authored numerous articles that have been published in national and international publications and has presented at state, national, and world conferences. She presented the findings of the Richardson Study at the World Conference for the Gifted and Talented Children in Hamburg in 1985 and at Oxford University in July of 1986. Ms. Cox is the primary author of the final report of her study, *Educating Able Learners: Programs and Promising Practices.*

She was the founding President of the Texas Association for the Gifted and Talented.

Biography of Dr. Neil Daniel

Neil Daniel is Professor of English and Director of Freshman Composition at Texas Christian University, Fort Worth, Texas. His academic and professional interests are in students of high ability at the secondary and post-secondary levels.

His teaching responsibilities at Texas Christian University include courses in grammar and composition, designed primarily for teachers. He has worked with secondary students conducting summer programs in conjunction with the Gifted Students Institute and has taught courses for teachers of honors and Advanced Placement English.

His recent publications concerning students of high ability include *Educating Able Learners: Programs and Promising Practices*, and articles in *G/C/T*, *Roeper Review*, *Gifted International*, and the NASSP *Bulletin*.

Dr. Daniel holds bachelors and masters degrees from Southern Methodist University and a Ph.D. from Indiana University.

Abstract

This monograph describes the organization, findings, and impact of the Richardson Study, a project funded to investigate programming options for able learners. Responses from a nationwide distribution of questionnaires, comments from the creatively fertile MacArthur Fellows, investigations of successful programs — from Project Pegasus in Iowa to Armand Hammer United World College of the American West, Montezuma-and mini-conferences in Fort Worth, Texas all aided in the compilation of recommendations for educating able learners. Central to those recommendations is diverse, but sequential, programming to meet the exceptional needs of all students. To implement the results of the study, the Richardson Foundation is funding a model program, the Pyramid Project. Four school districts of different sizes work cooperatively in effort to provide services that best meet the needs of able learners. The process of development and implementation of the Pyramid Project is the central focus of this chapter.

THE RICHARDSON STUDY
Dissemination and Implementation

Education is today's commitment to tomorrow. Conscious of this commitment, the Sid W. Richardson Foundation undertook a study of education for able learners that would take four years and would involve hundreds of persons. The Richardson Study examines how young people of superior ability are being educated in this country. The goals of the study were: (1) to learn what educational practices for able learners are in use throughout the country; (2) to make informed judgments about what programs work best and offer the best chance of being adapted to various conditions, many school environments; and (3) to recommend an approach to educating able learners that would guide those interested in excellence in education.

Valleau Wilkie, Executive Vice President of the Sid W. Richardson Foundation, made it clear that the study was not to be done in isolation. When he chose June Cox to direct the research and gather data, he asked her to name an advisory committee that would assist in initial planning and would then meet regularly to review progress, challenge findings, and suggest future steps.

Wilkie was determined that the Foundation's investigation should not end with the study and a report, to be relegated to library shelves, but should guide real improvements in the education of superior students throughout the country. To achieve this end would require both a major dissemination effort and also funding a model program in Texas (in Texas because the Foundation's charter so limits its funding).

The effort to disseminate what the study uncovered began with a series of articles in *G/C/T*, a popular magazine for parents and educators of gifted students. The study resulted in the publication of *Educating Able Learners: Programs and Promising Practices* (University of Texas Press, 1985. All page references in this article are from the book). The dissemination effort has continued in conferences at which the recommendations of the study are discussed and persons in a position to effect change explore ways to put the recommendations to work.

Meanwhile, the Richardson Foundation has demonstrated its commitment by funding a model program, the Pyramid Project, to implement the recommendations of the Richardson Study. A cooperative program, involving four school districts of different sizes, the Fort Worth/Dallas Pyramid Project is the center of focus for this chapter. Along the way we will mention in some detail other results of the Richardson Study.

The Richardson Study

The four year Richardson Study provides a broad data base. After an initial checklist was sent to over 16,000 public and parochial school districts throughout the country, a follow-up questionnaire was sent to the more than 4,000 respondents. The 1,572 completed questionnaires provide a partial profile of American education with particular emphasis on programming options for able learners.

Part of the study's method was to seek the response of unusually able individuals concerning what worked for them educationally. We send an informal questionnaire to over one hundred individuals who had at that time (1983) been selected by the John D. and Catherine T. MacArthur Foundation of Chicago to receive their MacArthur Fellows grants. These are persons whose creative lives have shown the fertility we normally associate with able learners, especially the gifted and talented. From the responses of the MacArthur Fellows, we hoped to learn what channeled their interests and prepared them for their unusual achievements. Over fifty replied.

The MacArthur Fellows are not representative of the general population. But precisely because they are not typical, they offer an opening through which we can look at what might work educationally. We asked them to talk about what mattered in their educational backgrounds; what influences they could pick out as significant. Their responses, highly individual and thoughtful, dealt with home environments, influential teachers, and educational practices, good and bad. The information provided by the interview findings gave us insights we could not have elicited from a more formal questionnaire.

A feature that distinguishes the Richardson Study is its look at programs that succeed, from Project Pegasus in Iowa to Oaks Academy in Texas, from Bronx High School of Science in New York to the Armand Hammer United World College of the American West, Montezuma. The philosophy behind the study and the motive for its method is that we can find our best inspiration for change in the success of particular examples. We visited Plano, Texas, where continuous progress is well established in the elementary schools and students are allowed to advance as they master content and skills on an unbroken continum. We went to specialized schools, like the North Carolina School of the Arts, where students are allowed to concentrate on developing special talents. We saw summer programs, and we talked with the administrators of high school internships and mentoring programs. From these and other educators, we sought to learn what offers the best challenge to able learners.

Finally, we invited educators involved in programming for able learners to a series of mini-conferences in Fort Worth. By bringing them together to talk to each other and to us, we gained an important perspective on why certain programming approaches work and how they might be adapted to a variety of situations.

The recommendations of the Richardson Study are provided in outline form at the end of this chapter. They can be summarized briefly here. In the study we argue for comprehensive programming for able learners, providing a steady challenge for all students, helping to insure that no individual talent withers for want of opportunity. Included are recommendations for discovering and nurturing talent in students (including traditionally neglected groups: the economically disadvantaged and the culturally diverse), developing appropriately trained staff and teachers, and evaluating the effectiveness of programs to insure accountability and add credibility. Finally, we call for coordinated schooling and cooperation among all segments of society to develop a new generation of creative, self-motivated students.

Central to our recommendations is educational programming that provides diverse but sequential experiences for able learners as part of the total educational program. In the study we use the term "comprehensive programming," by which we mean to suggest that all the exceptional abilities of students will be recognized and provided for in sequential, well-articulated provisions.

The provisions (not always separate programs) should begin at the kindergarten or preschool level and allow students to move through sequential curricula at an appropriate pace to commencement from high school and beyond.

Probably, the most crucial concept in this approach is flexible pacing, the provision that students should move ahead on the basis of their mastery of skills and content, not at a pace tied to their age and grade. This provision necessarily entails the development of a skills continuum throughout the grades in each intellectual/educational domain. It is both the blessing and the challenge of our decentralized educational system that we have no national standard, no generally accepted menu of

skills or nationally approved curriculum agenda. This means that each district or school must build its own staircase. Help is available in the professional literature on curriculum. There are experts around every corner. But, the most useful resources for curriculum development are the teachers already in the system. In some instances, the skills and content are already in place and spelled out in some detail.

What is required, therefore, is that able students be allowed to move ahead with those who are older or that advanced content be brought down to the lower grades to accommodate individual progress. As our investigation reveals, many schools have a proven record of practical success with flexible pacing.

Flexible pacing requires some administrative adjustment. It necessitates, often, retraining of current teachers in techniques of record keeping and monitoring student progress. But on the whole, flexible pacing entails no significant added resources. Like much of what we recommend, it primarily demands a shift in thinking.

Our recommendation in favor of continuous progress should not be taken to imply that we favor acceleration at the expense of enrichment. Students should not race through the curriculum, but should be provided ample opportunity to explore widely as new areas of interest are opened to them. One of the useful insights provided by the MacArthur Fellows was the value to them of out-of-class activities. Robert Root-Bernstein tells of two such experiences that helped to shape him intellectually. One was a summer session for bright students at the University Elementary School, UCLA, in which he spent nearly eight weeks studying Greek culture. "Another important educational experience of my high school year," Root-Bernstein continues, "was a year of Saturday mornings spent as a volunteer at the Los Angeles County Natural History Museum. I worked in the paleontology section, carefully removing prehistoric animal bones from blocks excavated from tar pits" (pg. 18). Root-Bernstein credits this experience with helping to develop his interest in natural history.

A program need not be put in place all at once or with violent dislocation of what already works. An effective program for able learners can be put together like a mosaic, one piece at a time. A district or a school can move at its own pace so long as the over-all pattern is kept in mind and so long as programming options are designed with attention to all learning needs, allowing students to progress rapidly in those subject areas and skills where they have highly developed aptitude and at the same time helping them to strengthen those skills where they have a weakness.

The Pyramid Model

While the study was going on, and before its recommendations had crystallized, administrators of several districts, in consultation with the director of the study, conceived the Pyramid Project as a means of seeing the study's recommendations in action and of providing a model that would be copied in a wide range of cities and school districts. By the time the study had been published, a five-year plan was drawn up, four participating school districts had been selected, and the Pyramid Project was ready for implementation with funding from the Richardson Foundation.

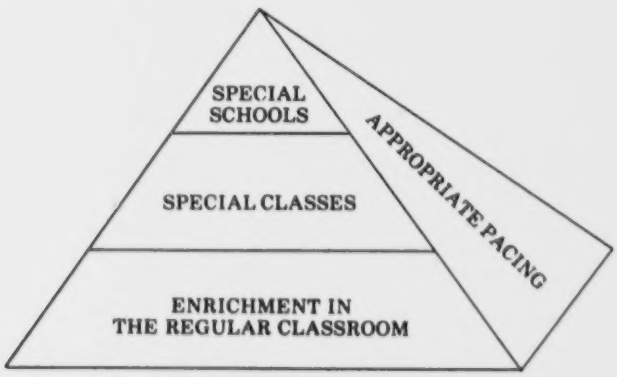
The Gifted Students Institute was chosen as coordinating and fiscal agent for the Pyramid Project. A nonprofit education agency, chartered in 1972, the Institute is committed to aid the discovery and nurturing of bright and talented youngsters by:

1. Increasing public awareness
2. Offering direct services to families, including testing referrals, conferences, and reference sources
3. Improving the education of teachers, counselors, and administrators
4. Conducting research
5. Publishing periodicals
6. Producing media presentations, and
7. Helping school districts implement exemplary programs.

Now the central office of the Pyramid Project, the Institute is adjacent to the campus of Texas Christian University. The proximity to TCU encourages cooperative efforts. Five other universities in the Fort Worth/Dallas area are involved from time to time in Institute activities. The Institute is relatively small, with a professional staff of six and an office staff of three.

June Cox, Executive Director of the Gifted Students Institute, has steered the development of the Pyramid Project from the beginning, both the conceptual and the administrative structure. Central to the planning and inherent in the concept of the pyramid is the conviction that every district is unique. No single set of programming options characterizes the pyramid model. Instead, the model offers an open structure into which the participating school districts can fit the options they regard as best suited to their own circumstances and resources.

Pyramid Illustration



THE PYRAMID CONCEPT

At the broad base of the pyramid and serving the largest number of talented learners is enrichment in the regular classroom. Most teachers will need good support services — clerical help or resource teachers — to provide substantial enrichment activities.

A smaller number of students, represented by the mid-section of the Pyramid will require special classes. At the elementary level, large districts may select students for special classes from a single grade; in smaller districts, the special classes may require cross grade grouping. At the secon-

dary level, special classes will likely be honors or advanced placement sections.

At the top of the pyramid, are specialized schools, such as schools for the performing arts or schools for science and mathematics. Such schools are intended for students who are exceptionally gifted or have special interests. Local resources and interests will determine the direction such specialized schooling will take.

As participating districts develop their plans for comprehensive programming, using the pyramid model, they maintain continuous assessment to determine the best direction to take, based on the success of present programming. A comprehensive program cannot be imported whole or instituted by fiat; it must grow organically, in response to its own achievements.

Essential to the pyramid model is its strong emphasis on appropriate pacing. If students are allowed to move ahead as they achieve mastery in a given content or skills area, the regular classroom will remain the best place for many able students to learn. Also important are services provided outside of the classroom; adequate counseling, programming on weekends and during the summer, and other educational experiences to complement the school experience.

The Fort Worth/Dallas Pyramid Project

The Districts

Four school districts in the Fort Worth/Dallas area were invited to participate in this ambitious undertaking. The districts were selected not only because they are close to one another, but also because of their differences in size and demographic make-up. Hoping that the project would serve as a model to other districts, the Institute sought a diversity that would test the Richardson Study's recommendations. Were they practical for the small district, for the large district, and for districts in between?

The Cedar Hill community (population 10,000) is fifteen miles from downtown Dallas, in southwest Dallas County. The school district serves approximately 2,500 students on five campuses: two elementary schools (K-4), one intermediate school (5-6), one middle school (7-8), and one high school (9-12). The student population is primarily Anglo (87 percent), with 6 percent Blacks, 6 percent Hispanic, and 1 percent Asian. Approximately 65 percent of the graduates of Cedar Hill High School attend college. Cedar Hill has an administrative staff of thirteen, all with multiple roles and responsibilities. There are 152 teachers and other professional staff members in the district.

Because of major residential building in the area, population studies project that during the next five years the Cedar Hill Independent School District's student enrollment will more than double. Expansion of existing facilities can accommodate growth in the upper grades. One new elementary building will open in the fall of 1986, another in 1987, and other schools will be added in coming years.

The Birdville Independent School District serves four Tarrent County communities and parts of two others, including outlying portions of Fort Worth. The district provides for approximately 16,500 students on 25 campuses: 17 elementary schools (K-6), six junior high schools (7-9), and two high schools (10-12). The district employs a staff of 1,000. The student population in the Birdville ISD is primarily Anglo, with less than 10 percent minorities. Over 60 percent of the graduates enroll in institutions of higher learning.

The citizens served by the Birdville schools are primarily employed in light industry and technological vocations. Rapid growth in the northeast portion of the district, associated with advanced technology fields, is balanced by declining population to the south and southwest. The resulting shift in attendance patterns will present a challenge to the school system, even though a district-wide view projects a stable population or only minimal growth.

Located in the heart of Dallas/Fort Worth metropolitan area, the Arlington Independent School District serves a total population of 252,000, including 29,000 students, K-12. The Arlington ISD operates 29 elementary schools, eight junior high schools, and five high schools, organized on a K-6, 7-9, 10-12 plan. The population is largely Anglo (88 percent). Of the remaining population, approximately 5 percent are Black, 4 percent Hispanic, and the remaining 3 percent Asian or American Indian.

The average education for citizens of the Arlington community is 13.2 years, one of the highest levels for cities in Tarrant County. Like other cities between Dallas and Fort Worth, Arlington has a high percentage of workers in technical, sales, and administrative support occupations. The average yearly household income is about $35,000. The home of the University of Texas at Arlington, a major league ball park, and Six Flags over Texas, the city is a family entertainment center, as well as a major center of light industry.

An average annual growth rate of 5.25 percent during the '80s will likely result in a population of 288,000 for the city of Arlington by 1990. New schools must be built each year to keep up with the increase in student population.

Of the four districts in the Pyramid Project, only the Fort Worth Independent School District has the characteristics of a large urban public school system. Meeting the needs of an ethnically diverse population (38 percent Anglo, 36 percent Black, 23 percent Hispanic, 3 percent other), the district serves approximately 65,000 students on 92 campuses: 61 elementary (K-5), 19 intermediate (6-8), and 12 high schools (9-12).

The district has experienced shifts in populations among its campuses. Declining enrollments in some geographic areas have necessitated closing schools and restructuring attendance areas. Major

administrative reorganizations have occurred in recent years and continue to affect the development of new educational approaches. The district emphasizes magnet schools as one means of integration and also as a part of its approach to challenging students of high ability. Three elementary magnet schools, five middle magnets, and four high school magnet programs are distributed among the lower socio-economic sections of the city.

District Commitment

When the four districts were invited to participate in the Pyramid Project, the pyramid model was submitted to their top administrators and to the boards of education. Comprehensive programs and the pyramid model were discussed. The districts were assured that the project would follow the recommendation of developing a comprehensive program as one might piece together a mosaic, building on the good programs they already had in place. There would be many options, and not all the districts would be expected to use exactly the same approach. One provision, however, was firm; a commitment that students should be allowed to progress as they achieved mastery. Flexible pacing might be accomplished in a variety of ways, but each district would be expected to make good faith effort to achieve it.

In addition to this commitment to flexible advancement, each district pledged to assign one or more persons from the central office to the project. The amount of time and number of persons varied, depending on the size of the district. Fort Worth, largest of the districts, agreed to assign two full-time persons to the project. Then each district developed a preliminary five-year plan. As was expected, those plans are being modified, even in the first year, but they provide useful guidelines.

Start Up

All four districts have developed a written philosophy for the education of able learners. Each district has a coordinator. In Fort Worth, the coordinator devotes part time to the project and has two staff members working on the project full time. Arlington has two part-time coordinators, one elementary and one secondary. Birdville and Cedar Hill, the smaller districts, have part-time coordinators. Finally, each district has assessed its current programs for able learners and has determined which they want to expand and which will need to be phased out. To illustrate, Fort Worth already had a fledgling International Baccalaureate program, which the Pyramid Project is helping to strengthen. Birdville has a pull-out program they have decided to phase out gradually, one year at a time.

Some other recommendations have been implemented by the project as a whole, with the Gifted Students Institute coordinating the efforts. The Institute conducted a thorough needs assessment to collect baseline data. The needs assessment surveyed students, teachers, administrators, and parents. Each person was asked to rate the Richardson Study's recommendations in order of importance and in order of present level of implementation, according to individual perceptions. Some 3,258 responses were analyzed.

An adjusted needs index was developed by applying a formula to the discrepancy between perceived importance and perceived level of implementation. The two recommendations that emerged as the greatest needs in all four districts were providing the classroom teacher adequate support services and adopting flexible pacing at all levels. Each district used the needs assessment to develop short and long range plans for implementing the recommendations, giving special priority to those with the highest needs index.

To determine the current pacing practices, what provisions were already in place that allowed students to advance as they achieved mastery, the Institute staff conducted a pacing survey by interviewing teachers and principals. Some 156 interviews provided additional baseline data. Fort Worth, the largest of the districts, has a long-standing policy that encourages continuous progress in the elementary schools, and the interviews uncovered a few schools in the district where students were indeed allowed to move ahead as they achieved mastery. Generally, however, principals and teachers were more comfortable with allowing slower students to work in materials below grade level than they were with allowing rapid learners to advance to materials above their grade level. The other three districts had even fewer examples of flexible pacing at the elementary level. The most popular practice for allowing secondary students to work above grade level was the Advanced Placement program that enables high school students to take college level work while they are still in high school.

Staff Development

The Pyramid Project budgets most of its funds for staff development and dissemination. It is staff development, of course, that most directly affects the participating districts. In accordance with the recommendations of the Richardson Study, staff development is continuous, and the project uses nearby colleges and universities, both for staff development and for innovations in curriculum. Courses for teachers of Advanced Placement in English, offered in cooperation with Texas Christian University, strengthen and expand Advancement Placement classes in all the participating districts. Advanced Placement training will be extended to other content areas as well.

In addition, the Institute, again in cooperation with TCU, offers math and science courses for elementary teachers, administrators, and consultants each semester. The courses are offered in both Fort Worth and Arlington in order to serve the entire project. These courses for elementary teachers, while content based, are expected to assist teachers with the most difficult of all recommendations to implement, flexible pacing.

Kathleen Martin, who teaches the courses for math and science teachers, says the key to flexible advancement is improved teacher training. "Teachers must know more content," she maintains, "in order to know when to allow students to move horizontally (enrichment) or vertically (acceleration)." Elementary teachers, required to be generalists, can hardly be expected to be specialists, as well. Yet the richer their background in a given content, the more flexible they can be in meeting the individual needs of students.

The math and science courses for elementary teachers are followed by activities to strengthen the teachers' knowledge base — and their confidence. The college course is the first of three components. In the second component the teachers will design an instructional model to be incorporated in the district's course of study. The third component brings the teachers back together in monthly seminars to share successes and problems.

Staff development is often extensive. For example, strengthening the International Baccalaureate program in Fort Worth has required a major effort. The teachers had been thrust into the program with little preparation. They had never visited an IB program, nor had they been able to talk with teachers experienced in the program.

A massive infusion was needed. The project sent the IB and the pre-IB teachers and coordinators to visit an established program. After they returned, the Institute hosted a two-day workshop, inviting educators with successful IB track records to work with the teachers. Then the IB teachers went to the Armand Hammer United World College for further training, and the Institute followed that exposure with a writing-across-the-curriculum workshop. The following year the teachers were scheduled to work with experienced teachers and consultants in an intensive, virtually tutorial situation. One or two Fort Worth IB teachers in each content area were teamed with an experienced teacher from the highly successful IB high schools in Houston to develop IB curriculum in their disciplines.

A specially designed 18 hour staff development series based on the study trains administrators and key teachers from each district. The series, generally in two-hour segments, emphasizes comprehensive programming for able learners, including the gifted and talented. Following their training, the teachers and administrators are equipped to train others, including parents, in their districts.

Training activities for administrators emphasize flexible pacing. Other training activities include Junior Great Books leadership courses, curriculum workshops, and student assessment techniques. The Institute members are convinced that the staff development will make for long-lasting improvements in the education of students. They anticipate that as a result of intensive staff development over the project's five years, teachers and administrators will enjoy an increase in awareness, preparedness, and vision.

Flexible Pacing

Progress on flexible pacing is being monitored as part of the project's commitment to regular evaluation and as a way to insure accountability. The Institute's director of research and evaluation is updating the pacing survey to document the first year's progress in this area. It is important to know how many more children this year than last year are being allowed to move forward as they achieve mastery.

Each district approaches the challenge of flexible pacing differently. Cedar Hill is concentrating on continuous progress in the elementary schools. As administrators interview candidates for

a new elementary school to open this year, they have announced that only teachers and principals committed to flexible pacing will be considered. They are determined that students will advance as they achieve mastery in each content area. The superintendent's announcement about the school brought scores of requests from current faculty members for a transfer to the new school. They are eager for the challenge. Parents clamor to enroll their children, but since this is to be a neighborhood school, not a magnet, only neighborhood children may attend. Plans are underway to use the new school as a laboratory and train faculty members from other schools. Continuous progress will be the philosophy and practice of the district's present and future schools.

Arlington's high schools are expanding their Advanced Placement program as a form of flexible advancement at the secondary level. The district is also cooperating with the University of Texas at Arlington in a dual enrollment program. Advanced students receive chemistry instruction in their high school with supplementary instruction and labs provided by the university. They will take exams at both levels and so receive both high school and college credit.

Arlington has introduced continuous progress in math at eight elementary schools and in reading at four elementary schools. Each year the program will be expanded until the district reaches its goal of continuous progress in all elementary schools in at least these two content areas.

Birdville's first attempts to introduce flexible pacing involve cross grade grouping of high ability fourth, fifth, and sixth graders. Fort Worth, with a continuous progress policy in place, but dependent for implementation on the awareness and initiative of the principal, has a few outstanding examples of flexible pacing that could be models for other schools inside and outside the district. One principal has successfully compacted first grade and second grade curriculum into one year for rapid learners.

Other Achievements

At the time of writing, the Pyramid Project in the Fort Worth/Dallas area is in its second year. It may be unwise to talk of real and permanent change. The districts are making noticeable progress, however, on a number of provisions implicit in the Richardson Study recommendations. Each district is moving in its own best direction. Birdville sees as one of its top priorities, phasing out the pull-out program. As it does so, the district is providing classroom teachers support services by having the specially trained teachers of the gifted serve as consultants to their colleagues in the regular classrooms. Birdville has also introduced a high tech internship program for honor students in both of its high schools. Each participating student carries a full load of classes and works a minimum of two hours daily in a non-paid position. Capitalizing on the growing electronic communications industry in the area and modeling the program on mentor/intern programs described in the Richardson Study, the district finds the students positions that vary from computer accounting to telecommunications technician.

Fort Worth has some outstanding enrichment programs at the elementary level. In one school, learning center materials on carts allow teachers to have a greater variety of materials than would otherwise be possible. The language immersion program at the primary level, begun before the Pyramid Project was launched, has been reinforced by the project's focus on staff development. Project funds allowed principals and teachers to visit established programs through the country. Following these visits they made recommendations to the district for improving and expanding their program. In the Fort Worth immersion program, students from kindergarten through fifth grade study some of their subjects in Spanish and others in English. Because it is not easy for students to enter the program past the first grade, if they have not studied Spanish, the project offers an intensive Spanish language program in the summer for students who wish to enter later.

The Arlington district has developed mini-units for elementary teachers that pull together enrichment materials. Teachers can order the materials by telephone from a central location. Aware of the value of summer enrichment programs, Arlington has a computer camp for fifth and sixth graders. Elementary and secondary teachers team up as instructors for a chemistry camp, also for fifth and sixth graders.

The Ardmore Pyramid Project

To fulfill the second part of its ongoing commitment — to disseminate the findings of the Richardson Study — the Foundation relied on *Educating Able Learners.* Even before the book was published, however, and before the Fort Worth/Dallas Pyramid Project was inaugurated, the Foundation had begun to reach out and was discussing the recommendations of the study at other forums.

The first was a conference at Winrock International, in Arkansas, where June Cox explained the pyramid model as an outgrowth of the Richardson Study. Emmet Hudgins, Assistant Superintendent for the Ardmore City Schools, attended the conference. When he returned to Ardmore, he wrote proposals to the Kerr Foundation in Oklahoma City and the Noble Foundation in Ardmore, requesting funding for three years to start a pyramid project in Ardmore. The two foundations agreed to cooperate on the venture.

Dee Broughton, a teacher for the gifted in the Ardmore City Schools, read of the proposed project and its focus on flexible pacing. Her initial reaction was, "Oh, no. More work for the teachers." When she gave closer attention to the recommendations of the Richardson Study, however, and read with care its appeal for appropriate pacing, she concluded that this recommendation was in fact the key to improved education in the Ardmore City Schools. Broughton applied for the job of project coordinator.

Ardmore already had in place a fair range of activities for its most able learners: in-class enrichment activities and a variety of academic competitions. The main innovation to be developed in the three-year plan was to allow the students to move at variable rates, accommodating individual differences, through the various skills in the principal content areas.

The district began with mathematics skills because those skills are the easiest to objectify, and they are often considered sequential. The elementary schools eliminated the usual grading system in math and dismantled the structure that linked the level on the math skills continuum with grade level in school. The goal for each student is to progress from the beginning to the pre-algebra level by the time the student completes eighth grade. Both pre-algebra and algebra are offered in eighth grade for students ready for them.

Although simple in concept, this change required a major shift in philosophy and methods for the teachers. No longer would there be a "third grade math" and a "fourth grade math" book. Teachers at every level should have to be able to handle material outside their usual range. And, they would have to adjust their teaching approaches. For example, it was no longer necessary to teach every page to every student. If a student could demonstrate mastery of a given process or principle, even without in-class instruction, the student should be allowed to move to the next level.

Moreover, it became unnecessary to spend weeks in review. To keep students adequately challenged, they are moved along at their own paces. The corollary is that each student must truly master each level before going on to the next, for there will not be several weeks of review the next year to allow students to pick up what they did not quite get this year.

The new approach was a jolt to parents, as well. No longer receiving grades — A, B, C, D, F — the parents get a print-out that identifies where the student is on the math skills continuum. Since the student's progress is based on mastery of the material and not on a learning rate, the system eliminates failure. It also eliminates the A grade and the motivation of the gold star. Abler students move ahead at a pace that is comfortable to them. The slower students also advance at their own pace.

There was some fear, initially, that the absence of the letter grade would reduce the incentive of students. It is too soon to dispel that fear, but so far the over-all progress of the students has not been affected.

The second step in the adoption of flexible pacing, for the second year, is to introduce the same approach into the language arts classes. This step is easy and natural, for many language arts teachers are accustomed to grouping students for instruction at different levels. The school system will have an integrated language arts curriculum, combining writing and speaking with reading, listening, and thinking skills. But, the main innovation will be allowing students to move at their own rates.

For the third year, the plan is to begin flexible pacing in science and social science. Teachers in these subjects are less used to thinking of student progress in terms of acquiring skills. They are more likely to see progress as mastering content. The district hopes that lessons learned by introducing

flexible pacing into math and language arts will carry over and ease the shift to flexible pacing in science and social science.

To understand flexible pacing it helps to see that the concept does not apply equally to every subject in all grades, K-12. In mathematics, for example, the innovation of flexible pacing takes the students only through the first eight grades. When they enter the ninth grade, some students will enter pre-algebra, others will go directly into algebra. From that point on, through their high school mathematics, the students will be in conventional courses earning regular letter grades. In science and social science, flexible pacing will not begin until the fourth grade, for below that level these subjects are not taught separately from math and language arts.

The pyramid concept entails comprehensive programming and goes beyond appropriate pacing. The Ardmore City Schools have devoted most of their energy to flexible pacing because it is the most radical change for them. The district already had in place a variety of enrichment activities: OM (formerly Olympics of the Mind), Academic Decathalon, and other academic competitions. An important next step, according to Broughton, is to have resource specialists for the able learners, keeping tabs on the more gifted students and introducing enrichment, Renzulli's Type III activities, as an adjunct to regular classes.

A regular program of Advanced Placement courses is in place in the high school at Ardmore. The next step at the high school level will be the introduction of International Baccalaureate courses, with the final goal of offering the full IB curriculum. To offer appropriate support for the Advanced Placement courses and the International Baccalaureate, Ardmore has initiated pre-AP and pre-IB courses beginning at the seventh grade level. Included in this plan is the introduction of foreign language courses at the middle school.

In addition, the district has made a commitment to concurrent or dual enrollment. An example at the lower levels is that the Board of Education has approved offering Algebra I in the eighth grade, on the middle school campus. Students enrolled in this course will receive high school credit. At the high school level, concurrent enrollment is facilitated by Higher Education Center housed on the high school campus; four Oklahoma colleges offer courses for college credit to high school students who qualify for admission.

Perhaps the most striking development of the Pyramid Project in the Ardmore school district is that it has eliminated the exclusive grouping of gifted students. Because of flexible pacing, the most able learners need not be singled out and placed in special classes. Even the academic competitions and other enrichment programs will use self-selection. Students will try out for the competitions and be selected on their competitive performance rather than by test scores or other arbitrary criteria.

In talking with those instrumental in putting the Ardmore pyramid in place, we raised questions we thought would illuminate the experience. The first was, how does the Pyramid Project fit into the general education program? Superintendent Perrin's response was, "The Pyramid Project *is* the general education program." Perrin assumes that when the three-year initiation phase is over and the elements of the pyramid are in place, the coordinator of the project will become Director of Curriculum. Because the project has not necessitated importing new personnel, the administrative machinery has not expanded substantially. Presumably the normal state funding can accommodate the changes once the change-over is complete.

We asked what the major effort was to get the Pyramid Project into motion. The answer was staff development. At the time of writing, while the Ardmore project is completing its first full year, the project coordinator and three resource specialists work at staff development nearly every day. Teachers have needed training in record keeping, and as the system phases in a new information management system — computerized record keeping — that training will continue. At the same time, the teachers must be kept up to date with the latest methods of teaching the several disciplines and techniques of classroom management.

We wanted to know if students, particularly the able learners, have shown a dramatic advance in the pace of their education. So far, the answer is no. A few students have jumped ahead on the math skills continuum. Two kindergarten students, for example, are doing math at the second grade level, but it is too early for the cumulative effect of flexible pacing to be measured.

Finally, we asked them to describe the response of the community. Their one-word reply was "fantastic!" Despite occasional uneasiness about the absence of letter grades in math, and some concern that without the punishment of failing grades the students would slacken their learning effort, the evidence suggests no reduction of student effort. The most noticeable effect has been enthusiasm among students and parents alike.

Dissemination Conferences

With the Pyramid Projects underway in the Fort Worth/Dallas area and in Ardmore, the Richardson Foundation continued its efforts to publicize the study and to encourage other communities to pay attention to its recommendations. The foundation has three goals: (1) to disseminate the findings of the Richardson Study where there was a strong possibility educators could benefit from the four-year national investigation, (2) to share information about the early stages of the Pyramid Project, and (3) to encourage foundations and other funding agencies to support the discovery and nurture of talent in their own states or regions.

To accomplish these goals the foundation initiated a series of dissemination conferences in cities outside of Texas. The first three conferences were organized by persons who had served on the advisory committee for the Richardson Study. Marvin Gold, editor/publisher of *G/C/T*, organized a conference in Alabama; Dorothy Sisk, of the University of South Florida, one in the Tampa area; Richard Benjamin, superintendent of schools in Ann Arbor, a conference in Dearborn, Michigan. Other state conferences have held in Utah, Maryland, and Connecticut. A regional conference in Illinois brought together participants from several Midwestern states. At the time of writing, conferences were scheduled for New York and Nebraska.

The Florida conference, at the Saddlebrook Inn near Tampa, attracted educators, community leaders, legislators, parents, local media representatives, and private foundation executives — all in a retreat atmosphere to increase the opportunity for informal interaction. At the Saddlebrook conference David Roberts, of the Edyth Bush Foundation, pledged that he would consider funding additional conferences in Florida and that he would entertain a proposal for funding a project similar to the Fort Worth/Dallas Pyramid Project. As a result of the conference in Florida, a Florida plan has begun to emerge, identifying some of the problems specific to Florida as well as focusing on the most current information concerning able learners. Dorothy Sisk summarizes the concrete achievements of the Saddlebrook conference as follows:

- planning committees in a number of counties to examine existing programs and develop long range plans for more comprehensive coverage
- cooperative arrangements of smaller counties with neighboring counties to better meet the needs of all able learners
- awareness of the need for broadening the state definition (of *able learners*)
- cooperation between universities, colleges, and school districts
- enhanced interest and support from private foundations
- an information network, "The Florida Network for Able Learners," to share the results of research in the area of able learners and to report on resulting actions
- a sharpened focus of attention and energies of the participants on solving some of Florida's educational problems

The conference in Dearborn, Michigan, was sponsored by the Washtenaw Intermediate School District, a consortium of ten individual school districts, ranging in size from 900 to 14,000 students, each of which has its own approach to serving the needs of able learners. Anita Todd Parks, consultant for gifted and talented for the intermediate district, is coordinating the efforts of the participating districts in developing a Pyramid Project. Richard Benjamin, superintendent of the Ann Arbor Public Schools, reports, "We are conducting detailed assessments of existing services in each district as a first step toward implementing the Richardson Study recommendations."

After a dissemination conference in Connecticut, Sherry Earle, from the office of Connecticut's Department of Education, wrote that the conference had renewed interest in seeing major commitments of private funds to support public school programs. Earle believes that the Pyramid Project's commitment to planning, curriculum development, flexible pacing, evaluation, and staff development will be imitated in the schools. "Comprehensive programming," Earle concluded, "may well be the watchword of the '80s."

An important by-product of the diseemination conferences and the interest that the Richardson Study has generated is the development of a network of contacts throughout the country. Dee Broughton, coordinator of the Ardmore Pyramid Project, has visited Michigan to offer her advice and other help as the Washtenaw Intermediate District works toward implementing its own pyramid project. Hilda Rosselli, from the University of South Florida, has been to Fort Worth to address par-

ticipants at a conference sponsored by the Gifted Students Institute.

Among the private foundations there has been a ripple effect, as well. Valleau Wilkie, executive vice president of the Richardson Foundation, believes that private foundations can make an important contribution to public education when they focus their giving in critical areas. Private foundations have in the main ignored public programs supported by tax dollars. But if foundation grants are added to the already substantial budgets of public programs, the impact of a relatively small investment can be significant. The Richardson Foundation took the lead initially, and its major commitment is necessarily in Texas. But, the example is being felt throughout the country. In addition to the Bush Foundation of Florida, the Kellogg Foundation of Michigan has an interest in the study and in the Michigan pyramid project.

It is clear that the Richardson Study has not gathered library dust. In addition to serving as a stimulus to discussion, the study has resulted in exemplary project in the area of Fort Worth and Dallas and has inspired similar projects around the country. If these projects are carried out with the enthusiasm and commitment with which they started, we can hope for real impact on the nation's schools and an improved educational climate for our ablest learners.

Summary of Recommendations

I. Administration

A. Develop a written philosophy for the education of able learners that is consistent with the goals and values of the school district and community. This fundamental first step should include a careful consideration of all the recommendations that follow.

B. Select a coordinator or coordinators during the early planning stages. As the person responsible for the success of the program, the coordinator should participate in the planning.

C. Assess the current program for able learners. Those elements that serve their needs well may be retained and expanded as other options are added.

D. Adopt flexible pacing at all levels. Recognizing that not all students learn at the same rate, allow students to advance as they master content and skills, at whatever pace is most natural and offer the steadiest challenge for each.

II. Discovering Talent

A. Broaden the process for assessing student abilities. This recommendation is implicit in our adoption of the term "able learners," intended to include a larger population than those customarily identified as "gifted students."

B. Assess the abilities of all students, and use the results as a basis for appropriate programming decisions.

C. Recognize that there is neither a single kind of intelligence nor a single instrument for measuring intelligence. Rather, there are multiple intelligences and multiple measures.

D. Encourage parents, primary teachers, and others responsible for the supervision of children to note their abilities and interests early and to provide appropriate stimulation. Remember that discovering and nurturing talent are interdependent.

E. Observe the ability of children to solve problems or fashion products over an extended period as an indicator of interest and ability.

F. Use puzzles and games that young children find motivating to discover their talents. A child's ability to recognize patterns in a given intellectual realm will indicate potential in that intelligence and aid in developing an intellectual profile. Pay close attention to the child's ability to use symbol systems, as well as the verbal.

G. Give thoughtful attention to special groups such as minorities. Avoid tests that are dependent on English vocabulary or comprehension. Supplement testing with checklists of characteristics valued by the subcultures. The screener should understand and respect each population and, if possible, speak the child's native language.

H. Use a wide range of testing strategies, including out-of-level testing. If students' abilities are to be assessed with standardized instruments, be sure they have a good congruence or "match" with the objectives of the curriculum and programming.

I. Throw a wide net, keeping entrance requirements fairly modest and tentative. Avoid arbitrary cutoffs. The goal is to include all students who can benefit from enriched pro-

gramming rather than exclude any who are marginal. Monitor regularly and let those with talent and motivation move ahead.

J. Avoid labeling any group of children as the gifted. To do so implies that some children are gifted in every area, and other children are gifted in none.

K. Provide a psychologically safe environment. Teach students to value their abilities and to use their individual strengths.

III. Programs

A. Recognize the importance of counselors in several capacities: participating in student assessment, ministering to the affective needs of students, guiding program selection of students, and counseling in career and college choices.

B. Build a comprehensive program as you would piece together a mosaic. Do not expect all elements to be in place at once.

C. Take care that programs are sequential, carefully integrated, and articulated throughout the system.

D. Offer program options that reach through and beyond the normal institutional boundaries: across disciplines, across grade levels, and across levels of intelligence.

E. Encourage independence through projects that culminate in real products and employ the methods of inquiry used by real scholars.

F. Develop specific plans for concurrent enrollment at all levels — elementary/middle, middle/high school, and high school/college.

G. Recognize that a few students will benefit from the opportunity to leave school and enter college early.

H. Make use of community resources, including the private sector. For example, include one-to-one mentoring relationships between students and business and professional leaders, or offer internships at the secondary level so that students can examine one or more career interests as an aid to informed academic and career choices.

I. Cooperate with area museums, arts of organizations, and civic groups to increase educational options available outside the school walls.

J. Encourage students to participate in some of the fine educational programs available after school, on Saturdays, and during the summer.

K. Consider specialized schools if the population of the community and the district's resources will support them. Although an ambitious undertaking, a residential school can serve a wider area than a single school district, and the school can be a laboratory for teaching strategies and curriculum content.

L. Recognize that racing through the curriculum is not the primary goal of a well-conceived educational program. Balance acceleration with enrichment activities for diverse types and degrees of intelligence.

IV. Staff Development and Teacher Support

A. Consider staff development a continuous process for teachers, consultants, and administrators.

B. Develop teaching strategies that are appropriate to the learning styles of able students, and encourage a wide range of thinking and questioning skills.

C. Arrange for joint planning among teachers at different levels with careful attention to the K-12 sequence in each content area.

D. Help teachers develop a managable record keeping system that allows them to monitor student progress without undue loss of instructional time.

E. Provide the regular classroom teacher adequate support services — clerical support, for example, or a resource teacher — so that enrichment is available to able learners in the regular classroom.

F. Use nearby colleges or universities as a resource for ongoing staff development and for innovations in curriculum as well as for educational research.

V. Evaluation

A. Plan the evaluation design as the program is being developed. It is necessary, for example, to establish base line data in order to monitor progress.

B. Conduct comprehensive and regular program evaluation to assure accountability. The evaluation design must answer questions about the success of individual program elements and about their impact on student growth and achievement.

C. Employ an external evaluator or team of evaluators to reinforce internal evaluation, to assure objectivity, and to add credibility.

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